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Data centre boom raises energy, sustainability concerns

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► Expert warns rising power demand could derail Malaysia's net-zero goals, calls for efficiency standards and green incentives

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PETALING JAYA: As data centre projects surge across Malaysia amid the country's digital transformation push, particularly to harness artificial intelligence (AI) across sectors, concerns are growing over energy efficiency and resource sustainability.

Malaysian Association of Energy Service Companies president Zulkifli Zahari noted that while media reports cite potential power demands of up to 11,000 megawatts (MW) from data centres, current consumption stands at just 434.5MW.

"It's also been reported that Tenaga Nasional Berhad (TNB) has received applications from new data centres totalling 11,000MW in power demand," he told *theSun* in a written response.

However, he warned that the demands on the national power grid over the next 25 years could threaten Malaysia's carbon neutrality goal for 2050.

"The requirement is expected to rise to between 2,000MW and 3,000MW over the next five to 10 years, driven by Malaysia's digital economy.

"Nevertheless, this spike could strain the grid's capacity and undermine the country's net-zero greenhouse gas emissions target," he cautioned.

To address this, TNB is planning to expand selected power plants and implement rapid-generation methods such as co-generation and open-cycle turbines.

These efforts are expected to align with government plans to encourage green energy sourcing for future developments, including data centres.

Touching on efficiency benchmarks, Zulkifli



Zulkifli warned that the demands on the national power grid over the next 25 years could threaten Malaysia's carbon neutrality goal for 2050. — SYED AZAHAR SYED OSMAN/THE SUN

noted that while many developers are targeting a Power Usage Effectiveness (PUE) of 1.2 to 1.4, there are no regulations in Malaysia enforcing this standard.

He also pointed out that most local authorities lack the technical capacity to assess data centre applications using PUE metrics.

"There needs to be a formal regulatory approach, potentially under the Energy Efficiency and Conservation Act, to introduce minimum efficiency standards and carbon thresholds.

"Incentives should also be provided to support on-site renewable energy, advanced cooling systems and battery storage," he added.

Zulkifli stressed that Malaysia should not view the growth of data centres as a liability, but as a key component of its energy transition agenda.

"Malaysia has the potential to become a regional hub for green data centres. But if we

delay, we risk losing out to competitors like Indonesia, which can offer geothermal-powered facilities," he said.

Reports have indicated that power demand from data centres could eventually account for up to 40% of Malaysia's installed generation capacity.

Last month, Kukup assemblyman Datuk Haji Jefridin Atan voiced concern over the rise in data centre developments in Johor, warning that increased energy and water usage could stretch local utilities.

Environmental group Sahabat Alam Malaysia also raised alarm over water consumption, estimating that a 100MW data centre could use up to four million litres of clean water per day.

theSun has contacted the Energy Transition and Water Transformation Ministry for comments on the concerns raised, but no response was received at press time.